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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/540,768

12/16/2005

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EXAMINER

VAUGHAN, MICHAEL R

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,768	Applicant(s) MIZUTANI ET AL.	
	Examiner MICHAEL R. VAUGHAN	Art Unit 2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 1-5 and 8-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/15/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The instant application having Application No. 10/540768 filed on 12/16/2005 is presented for examination by the examiner.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been received.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "400" has been used to designate both the IP HEADER in both Fig. 4 and 5. This pattern is not consistent because the TCP/UDP Header of both Fig.4 and 5 are labeled differently. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1-5, and 8-18 are objected to because of the following informalities: with respect to claim 1 the phrase "in a state" is too broad to adequately define the scope of its bounds. Likewise the phrase "acquires information from **outside**" is ambiguous. For purposes of examination, Examiner is taking in a state to mean, readable to the acquisition means. The term outside is given the broadest reasonable meaning of outside of the device. Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 7 is rejected under 35 U.S.C. 101 as directed to non-statutory subject matter of software, per se. The claim lacks the necessary physical articles or objects to constitute a machine or manufacture within the meaning of 35 U.S.C. 101. It is clearly not a series of steps or acts to be a process nor is it a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. It is at best, function descriptive material per se.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are non-statutory when claimed as descriptive material per se, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be

statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994).

Merely claiming non-functional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because “[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.”). See MPEP 2106.01 [R-6].

2106.01 [R-6] Computer-Related Nonstatutory Subject Matter

Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” In this context, “functional descriptive material” consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of “data structure” is “a physical or logical relationship among data elements, designed to support specific data manipulation functions.” The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) “Nonfunctional descriptive material” includes but is not limited to music, literary works, and a compilation or mere arrangement of data.

Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (discussing patentable weight of data structure limitations in the context of a statutory claim to a data structure stored on a computer readable medium that increases computer efficiency) and *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754, 1759

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 6, the preamble sets forth a group consisting of devices. Throughout the body of the claim "a device" is referred to numerously. The subsequent references are unclear and therefore indefinite to the Examiner if the "a device" is the same or just a similar device. The claim is directed to a method so it is important to know whether or not it is the same device performing the steps. The phrase "one device" is also present which compounds the indefiniteness. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6, 7, 10-13, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 6,195,751 to Caronni et al, hereinafter Caronni.

As per claim 1, Caronni teaches a network device that communicates with other network devices connected through a network (see abstract), wherein: said network device comprising:

a group management means, which manages a group consisting of network devices that can authenticate one another (col. 7, lines 7-9);

a cipher communication means, which performs cipher communication with the network devices belonging to said group, using a common encryption key (col. 7, lines 5-6);

a storage means, which stores cipher communication information required for cipher communication with the network devices belonging to said network, with said information including information of said encryption key and identification information including host names [ID] and addresses (col. 9, lines 60-65) of the network devices belonging to said group; and an acquisition means, which acquires information from outside (col. 7, lines 53-55);

and when said acquisition means acquires said cipher communication information in a state that said storing means does not store said cipher communication information, said group management means stores said cipher communication information in said storing means [database] and sends identification information of its own network device to the network devices belonging to said group (col. 12, lines 30-35); and

when said group management means acquires identification information [ID] of another network device from said another network device through said cipher communication means [encryption], said group management means adds said identification information

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to said cipher communication information stored in said storage means [database] (col. 13, lines 30-34).

As per claim 2, Caronni teaches when said acquisition means receives an instruction to withdraw [leave] from the group, said group management means notifies withdrawal of its own network device to all the network devices belonging to said group through said cipher communication means, and deletes said cipher communication information from said storing means (col. 14, lines 47-55); and when a notification of withdrawal of another network device is received from said another network device through said cipher communication means, said group management means deletes identification information [changes all keys and throws out the KEK of the leaving member] of said another network device from said cipher communication information stored in said storing means (col. 14, lines 57-61).

As per claims 6 and 7, Caronni teaches a group management method for managing a group consisting of devices connected through a network, with a device of the group being able to perform cipher communication with another device of the group while authenticating each other (col. 4, lines 55-59), comprising: a group generation step [creation], in which one device connected to said network generates an encryption key used for said cipher communication (col. 9, lines 52-53), and holds, as cipher communication information, said encryption key and identification information including a host name and address of said one device itself (col. 10, lines 55-57);

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a first group participation step [group add], in which a device that acquires said cipher communication information notifies identification information of the device itself and information indicating participation of the device itself to all devices whose identification information is stored in said cipher communication information (col. 7, lines 22-27), and said device adds said identification information of the device itself to said cipher communication information and holds said cipher communication information (col. 12, lines 30-35);

a second group participation step, in which a device that receives said identification information and said information indicating the participation adds said identification information to the cipher communication information that said device holds (col. 13, lines 30-34);

a first withdrawal step, in which a device that receives an instruction to withdraw from said group notifies information indicating withdrawal and identification information of the device itself to all devices excluding said device itself whose identification information is stored in said cipher communication information (col. 14, lines 47-51), and deletes [leave] the cipher communication information that the device itself holds; and

a second withdrawal step, in which a device that receives the notification of said withdrawal deletes (col. 14, lines 59-61) the notified identification information from the cipher communication information that the device itself holds (col. 11, lines 37-43).

As per claims 10 and 11, Caronni teaches a non-cipher communication means, which performs non-cipher communication [sends out non-encrypted messages] (col. 12, lines 20-30);

and an access control means (col. 9, line 14), which controls accesses to services provided by said network device (col. 17, lines 44-46) ;

and when there occurs an access from another network device through said non- cipher communication means, said access control means permits said access when said access is an access to a predetermined port (col. 17 ,lines 41-49).

As per claims 12, 13, 16, and 17, Caronni teaches a network system comprising a plurality of network devices, and a network that connects said plurality of network devices, wherein each of said plurality of network devices is a network device [distributed flat implementation] (col. 4, lines 52-55).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, 5, 8, 9, 14, 15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caronni in view of USP 5,809,140 to Rubin et al, hereinafter Rubin.

As per claims 3 and 8, Caronni teaches cipher communication information [keys] are acquired and stored (col. 7, line 24) in a storage medium [database] (col. 7, lines 57-58). Caronni is silent in explicitly disclosing that the acquired means has an interface with a storage medium and when a storage medium, which stores said cipher communication information, is inserted into said acquisition means in a state that said

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storage medium stores said cipher communication information, said group management means copies the cipher communication information stored in said storage means to said storage medium. Rubin teaches the use of a storage medium [smart card], which stores said cipher communication information, is inserted into said acquisition means in a state that said storage medium stores said cipher communication information [keys] (col. 5, lines 50-60), said group management [session key distribution protocol] means copies the cipher communication information stored in said storage means to said storage medium (col. 6, lines 7-9). Rubin teaches the use smart cards to safeguard keys is a way to make is extremely difficult for an attacker to steal the keys (col. 6, lines 55-59). The master secret keys are used to derive all the other keys that protect the information. One of ordinary skill in the art would expect that using a smart card with its hardware defenses is safer than a device simply storing the keys permanently in memory. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the smart card teaching of Rubin with the secure group management system of Caronni because it would strengthen the security by making it harder to steal the keys. The use of smart card would yield a predictable result to one of ordinary skill in the art.

As per claims 4 and 9, Caronni teaches a non-cipher communication means, which performs non-cipher communication [sends out non-encrypted messages] (col. 12, lines 20-30);

and an access control means (col. 9, line 14), which controls accesses to services provided by said network device (col. 17, lines 44-46);

and when there occurs an access from another network device through said non-cipher communication means, said access control means permits said access when said access is an access to a predetermined port (col. 17 ,lines 41-49).

As per claims 5, 14, 15, and 18, Caronni teaches a network system comprising a plurality of network devices, and a network that connects said plurality of network devices, wherein each of said plurality of network devices is a network device [distributed flat implementation] (col. 4, lines 52-55).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USP 7,055,030 to Negawa teaches encryption and decryption to be appropriately performed in multicast communications.

US Patent Application Publication 2005/0025091 to Patel teaches methods and apparatus for providing a centralized source of session keys to be shared by a Home Agent and a Mobile Node.

US Patent Application Publication 2002/0037736 to Kawaguchi teaches a group communication method whereby the information of the clients is stored in a table for authentication and encryption purposes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL R. VAUGHAN whose telephone number is

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(571)270-7316. The examiner can normally be reached on Monday - Thursday, 7:30am - 5:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. R. V./
Examiner, Art Unit 2131

/Ayaz R. Sheikh/
Supervisory Patent Examiner, Art Unit 2131